Element Materials Technology - Fort Wayne
328 Ley Rd.
Fort Wayne, IN 46825
TEL: (260) 424-1622 FAX: (260) 424-9124
Website: www.element.com

June 22, 2020

Nickie Geros
East Chicago Sanitary District
5201 Indianapolis Blvd
East Chicago, IN 46312
TEL: 219-391-8466
FAX:

RE: S-901

Order No.: 20061615

Dear Nickie Geros:

Element Materials Technology - Fort Wayne received 2 sample(s) on 6/12/2020 for the analyses presented in the following report.

In accordance with your instructions, Element Materials Technology Indiana conducted the analysis shown on the following pages on samples submitted by your company. The results relate only to the items tested. Unless otherwise noted, all analysis was conducted using approved methodologies from EPA, SM, or other client-specified methods. All relevant sampling information is on the attached chain-of-custody form. The initials SUB as the analyst designate any testing sub-contracted by Element Materials Technology Indiana.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Andrew J. Etter

Andrew Etter
Project Manager
328 Ley Rd.
Fort Wayne, IN 46825

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Case Narrative

WO#: **20061615**
Date: **6/22/2020**

CLIENT: East Chicago Sanitary District
Project: S-901

The Cyanide 1677 testing was subcontracted to Eurofins - Pittsburgh. Their report is attached in its entirety.

The surrogate recovery was outside of acceptance limits for the 625_Special analysis on sample 20061615-001C due to suspected matrix interference. This data is reported based upon the acceptable recoveries in additional associated QC.

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Analytical Report

(continuous)

WO#: **20061615**

Date Reported **6/22/2020**

CLIENT: East Chicago Sanitary District **Lab Order:** 20061615

Project: S-901

Lab ID: 20061615-001 **Collection Date:** 6/11/2020 8:47:00 AM

Client Sample ID: #901 **Matrix:** WASTEWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
OIL AND GREASE, TOTAL				**E1664**		Analyst: **HF**
Oil & Grease, Total	6.6	5.0		mg/L	1	6/15/2020 2:29:22 PM
SV COMPOUNDS FOR CATEGORICAL RQTS				**E625**		Analyst: **SF**
Bis(2-ethylhexyl)phthalate	< 100	100		µg/L	10	6/18/2020 12:37:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected at the Reporting Limit	PL	Permit Limit
PQL	Practical Quantitation Limit	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

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Analytical Report

(continuous)

WO#: **20061615**

Date Reported **6/22/2020**

CLIENT: East Chicago Sanitary District **Lab Order:** 20061615

Project: S-901

Lab ID: 20061615-002 **Collection Date:** 6/11/2020 7:47:00 AM

Client Sample ID: #901 **Matrix:** WASTEWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
FLUORIDE				**E300.0**		Analyst: **HN**
Fluoride	1.8	0.5		mg/L	5	6/15/2020 7:38:00 PM
CHEMICAL OXYGEN DEMAND				**M5220 D**		Analyst: **DDE**
Chemical Oxygen Demand	500	10.0		mg/L	1	6/16/2020 9:51:00 AM
AMMONIA AS N				**E350.1**		Analyst: **AC**
Nitrogen, Ammonia (As N)	49.6	1.00		mg/L	10	6/17/2020 4:31:00 PM
PHENOLICS IN WASTEWATER				**E420.1**		Analyst: **ANS**
Phenolics, Total Recoverable	< 0.050	0.050		mg/L	2	6/16/2020 4:14:10 PM
TOTAL PHOSPHORUS				**M4500-P F**		Analyst: **HN**
Total Phosphorus	1.15	0.050		mg/L	1	6/15/2020 4:11:19 PM
TOTAL SUSPENDED SOLIDS				**M2540 D**		Analyst: **NB**
Suspended Solids (Residue, Non-Filterable)	156	40		mg/L	1	6/17/2020 11:40:00 AM
MERCURY				**E245.1**		Analyst: **FJR**
Mercury	0.00016	0.00010		mg/L	1	6/17/2020
METALS IN WATER BY ICP-MS, TOTALS				**E200.8**		Analyst: **FJR**
Arsenic	0.0103	0.00020		mg/L	1	6/17/2020 7:44:10 AM
Chromium	0.00539	0.00040		mg/L	1	6/17/2020 7:44:10 AM
Copper	0.0144	0.00020		mg/L	1	6/17/2020 7:44:10 AM
Lead	0.00209	0.00020		mg/L	1	6/17/2020 7:44:10 AM
Molybdenum	0.0324	0.00020		mg/L	1	6/17/2020 7:44:10 AM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected at the Reporting Limit	PL	Permit Limit
PQL	Practical Quantitation Limit	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

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Analytical Report

(continuous)

WO#: **20061615**

Date Reported **6/22/2020**

CLIENT: East Chicago Sanitary District **Lab Order:** 20061615

Project: S-901

METALS IN WATER BY ICP-MS, TOTALS

E200.8 Analyst: **FJR**

Nickel	0.0171	0.00100	mg/L	1	6/17/2020 7:44:10 AM
Zinc	0.143	0.00400	mg/L	10	6/18/2020 1:46:22 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected at the Reporting Limit	PL	Permit Limit
PQL	Practical Quantitation Limit	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-107090-1
Client Project/Site: Cyanide 20061615

For:
Element Materials Technology
328 Ley Rd
Suite100
Fort Wayne, Indiana 46825

Attn: Katie Hernandez

Authorized for release by:
6/19/2020 4:53:22 PM

Andy Johnson, Manager of Project Management
(615)301-5045
andy.johnson@testamericainc.com

PA Lab ID: 02-00416

Table of Contents

Job ID: 180-107090-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-107090-1

Comments
No additional comments.

Receipt
The sample was received on 6/16/2020 9:00 AM; the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.9º C.

General Chemistry
Method OIA-1677: The following sample was diluted to bring the concentration of target analyte within the calibration range: 20061615-001A (180-107090-1). An elevated reporting limit (RL) is provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: Element Materials Technology
Project/Site: Cyanide 20061615

Job ID: 180-107090-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Element Materials Technology
Project/Site: Cyanide 20061615

Job ID: 180-107090-1

Laboratory: Eurofins TestAmerica, Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-20
California	State	2891	04-30-21
Connecticut	State	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-20
Georgia	State	PA 02-00416	04-30-21
Illinois	NELAP	004375	06-30-20
Kansas	NELAP	E-10350	01-31-21
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-20
Louisiana	NELAP	04041	06-30-20
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20
Nevada	State	PA00164	07-31-20
New Hampshire	NELAP	2030	04-05-21
New Jersey	NELAP	PA005	06-30-20
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	01-01-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-21
Pennsylvania	NELAP	02-00416	05-23-21
Rhode Island	State	LAO00362	12-31-20
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-20 *
Virginia	NELAP	10043	09-15-20
West Virginia DEP	State	142	02-01-21
Wisconsin	State	998027800	08-31-20

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Sample Summary

Client: Element Materials Technology
Project/Site: Cyanide 20061615

Job ID: 180-107090-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-107090-1	20061615-001A	Water	06/11/20 08:47	06/16/20 09:00	

Method Summary

Client: Element Materials Technology
Project/Site: Cyanide 20061615

Job ID: 180-107090-1

Method	Method Description	Protocol	Laboratory
OIA - 1677	Available Cyanide by Flow Injection, Lig	EPA	TAL PIT

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: Element Materials Technology
Project/Site: Cyanide 20061615

Job ID: 180-107090-1

Client Sample ID: 20061615-001A
Date Collected: 06/11/20 08:47
Date Received: 06/16/20 09:00

Lab Sample ID: 180-107090-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	OIA - 1677		10			318779	06/17/20 13:57	CAK	TAL PIT
	Instrument ID: ALPKEM2									

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Analysis

CAK = Chuck Kieda

Client Sample Results

Client: Element Materials Technology
Project/Site: Cyanide 20061615

Job ID: 180-107090-1

Client Sample ID: 20061615-001A
Date Collected: 06/11/20 08:47
Date Received: 06/16/20 09:00

Lab Sample ID: 180-107090-1
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available	0.45		0.020	0.015	mg/L			06/17/20 13:57	10

Client: Element Materials Technology
Project/Site: Cyanide 20061615

Job ID: 180-107090-1

Method: OIA - 1677 - Available Cyanide by Flow Injection, Lig

Lab Sample ID: MB 180-318778/22
Matrix: Water
Analysis Batch: 318778

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available	ND		0.0020	0.0015	mg/L			06/17/20 12:23	1

Lab Sample ID: LCS 180-318778/21
Matrix: Water
Analysis Batch: 318778

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Available	0.0501	0.0490		mg/L		98	82 - 132

Lab Sample ID: MB 180-318779/22
Matrix: Water
Analysis Batch: 318779

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available	ND		0.0020	0.0015	mg/L			06/17/20 13:47	1

Lab Sample ID: LCS 180-318779/21
Matrix: Water
Analysis Batch: 318779

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Available	0.0501	0.0489		mg/L		98	82 - 132

QC Association Summary

Client: Element Materials Technology
Project/Site: Cyanide 20061615

Job ID: 180-107090-1

General Chemistry

Analysis Batch: 318778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-318778/22	Method Blank	Total/NA	Water	OIA - 1677	
LCS 180-318778/21	Lab Control Sample	Total/NA	Water	OIA - 1677	

Analysis Batch: 318779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-107090-1	20061615-001A	Total/NA	Water	OIA - 1677	
MB 180-318779/22	Method Blank	Total/NA	Water	OIA - 1677	
LCS 180-318779/21	Lab Control Sample	Total/NA	Water	OIA - 1677	

element

CHAIN OF CUSTODY RECORD

Omega COCID 128874	PAGE: 1	OF: 1

ADDRESS
Element Materials Technology - Fort Wayne
328 Ley Rd.
Fort Wayne, IN 46825
TEL: (260) 424-1622
FAX: (260) 424-9124
Website: www.element.com

SUB:
ADD:
CITY:
PHO:
ACC:

Eurofins
301 Alpha Drive RIDC Park
Pittsburgh PA 15238

SPECIAL INSTRUCTIONS / COMMENTS:

Due 6-19-20

PO# EFW0038698

ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description
1	20061615-001A CYAN_1677	S-901 Grab	500HDPENAOH	Wastewater	6/11/2020 8:47:00 AM	1	

180-107090 Chain of Custody

Relinquished By: Pauline Twomey	Date: 6/15/2020	Time: 5:00 PM	Received By:		Date: 6/16/20	Time: 900
Relinquished By:	Date:	Time:	Received By:		Date:	Time:
Relinquished By:	Date:	Time:	Received By:		Date:	Time:

TAT: Standard ☐ **RUSH** Next BD ☐ 2nd BD ☐ 3rd BD ☐

Note: RUSH requests will incur surcharges!

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples _____ °C Attempt to Cool ? _____

Comments: _____

7701-1101-1249

Login Sample Receipt Checklist

Client: Element Materials Technology

Job Number: 180-107090-1

Login Number: 107090
List Number: 1
Creator: Say, Thomas C

List Source: Eurofins TestAmerica, Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

element

Chain of Custody

W47,05

Laboratory Number: 20061615

	Client Information:	Billing Information:	PO Number:	Project Name/Number:	Page 1 of 1
Company Name:	East Chicago Sanitary District	Same		S-901	**Matrix Code**
Contact Name:	Nickie Geros		Quote Number:		DW = Drinking Water WW = Waste Water GW = Ground Water AQ = Aqueous OT = Other SL = Sludge SOL = Solid O = Oil SO = Soil F = Food SW = Swab NG = Natural Gas NGL = Natural Gas Liquid PW = Produced Water CF = Completion Fluid
Address:	5201 Indianapolis Blvd			Sampler's Signature	
			Required QC Level		
City, State Zip:	East Chicago IN 46312				
Phone Number:	219-391-8466 Ext. 240	Ext:	Bill Monthly	Shipping Method:	
Fax Number:			☐Yes	UPS / FedEx / Airborne	
E-mail Address:	ngeros@eastchicago.com		☐No	DHL / Element / Hand / Mail	

Which Regulations Apply:
☐RCRA ☐Drinking Water
☐POTW ☐Distribution
☐NPDES ☐Special
☐USDA/FDA ☐State
☐RECAP/RISC ☐Other

Turn Time
5 TAT

(Rush turn times will incur a surcharge and must be pre-approved by lab.)

Sample ID/Description	Collection Information: Date	Time	Grab / Composite	Matrix	Container: Quantity	Container: Type P=Plastic, G=Glass, V=Vial	Pres.: HCl, HNO_3, H_2SO_4, NaOH, $Na_2S_2O_3$	CYANIDE 1677	Oil & Grease Total	Bis(2EH) Phthalate		*Metals	NH3, T.PHOS, COD	PHENOL	300:Fl,	TSS		Comments
S-901 Grab	6-11-20	8:47	Grab	WW	1	P	NAOH	X										Samples Meet Acceptance Policy Yes No
S-901 Grab	"	"	Grab	WW	1	G	H2SO4		X									*As, Cr, Cu, Pb, Mo, Ni, Zn, & Hg,
S-901 Grab	"	"	Grab	WW	1	G	NONE			X								Temp. 30.3C
	"	"																
S-901 Composite	"	"	Comp	WW	1	P	HNO3					X						
S-901 Composite	"	"	Comp	WW	1	P	H2SO4						X					
S-901 Composite	"	"	Comp	WW	1	G	H2SO4							X				
S-901 Composite	"	"	Comp	WW	2	P	NONE								X	X		

	Relinquished by	Date/Time	Received by	Date/Time
1		6.12.20/1025		6/12/20/1025
2		6/12/20 1355		6-12-20 1555
3				

Composite Sampler:
Start Date/Time: 6-11-20 8:47
End Date/Time: 6-12-20 8:46

Received at lab on ice?
☑Yes ☐No Temp: 3.5°C

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

8800 North US 31
Columbus, IN
47201 USA
P 812-375-0531
F 812-375-0731

328 Ley Road, Suite 100
Fort Wayne, IN
46825 USA
P 260-471-7000
F 260-471-7777

909 Executive Dr.
Warsaw, IN
46580 USA
P 574-267-3305
F 574-269-6569

3371 Cleveland Road, Suite 100A
South Bend, IN
46628-9780 USA
P 574-277-0707

2417 W. Pinhook Rd
Lafayette, LA
70508-3344 USA
P 337-235-0483
F 337-233-6540